100

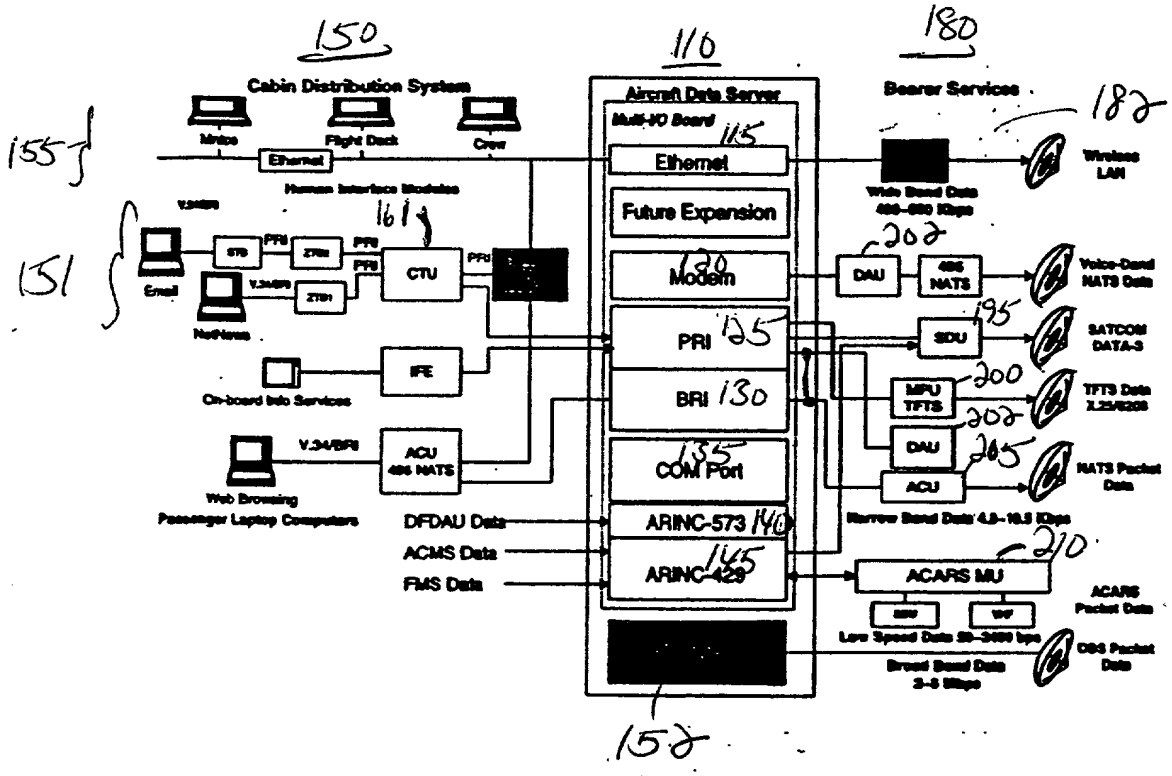

150
110
180
Cabin Distribution System
Aircraft Data Server
Bearer Services
Mentor
Flight Deck
Crew
Ethernet
155
Human Interface Modules
161
151
Email
NetMeeting
CTU
IFE
On-board Info Services
ACU
Web Browsing
Passenger Laptop Computers
DFDAU Data
ACMS Data
FMS Data
Multi-I/O Board
115
Ethernet
Future Expansion
Modem
120
PRI
125
BRI
130
COM Port
135
ARINC-573
140
ARINC-429
145
152
182
Wireless LAN
Wide Band Data
202
DAU
Voice-Band
SDU
195
SATCOM DATA-S
MPU TFTS
200
TFTS Data
ACU
205
Narrow Band Data
210
ACARS MU
ACARS Packet Data
Low Speed Data
Broad Band Data
DBS Packet Data

FIG. 1

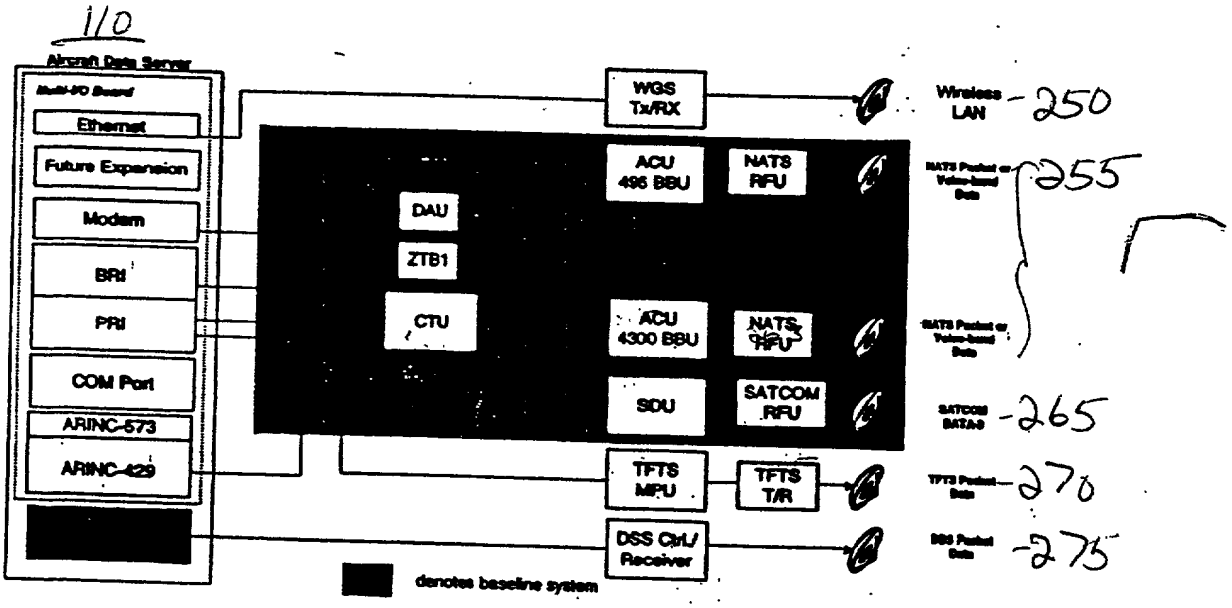

110
Aircraft Data Server
Multi-I/O Board
Ethernet
Future Expansion
Modem
BRI
PRI
COM Port
ARINC-573
ARINC-429
DAU
ZTB1
CTU
WGS Tx/RX
ACU 496 BBU
NATS RFU
ACU 4300 BBU
NATS RFU
SDU
SATCOM RFU
TFTS MPU
TFTS T/R
DSS Ctrl/ Receiver
denotes baseline system
Wireless LAN
250
255
265
270
275

FIG. 2

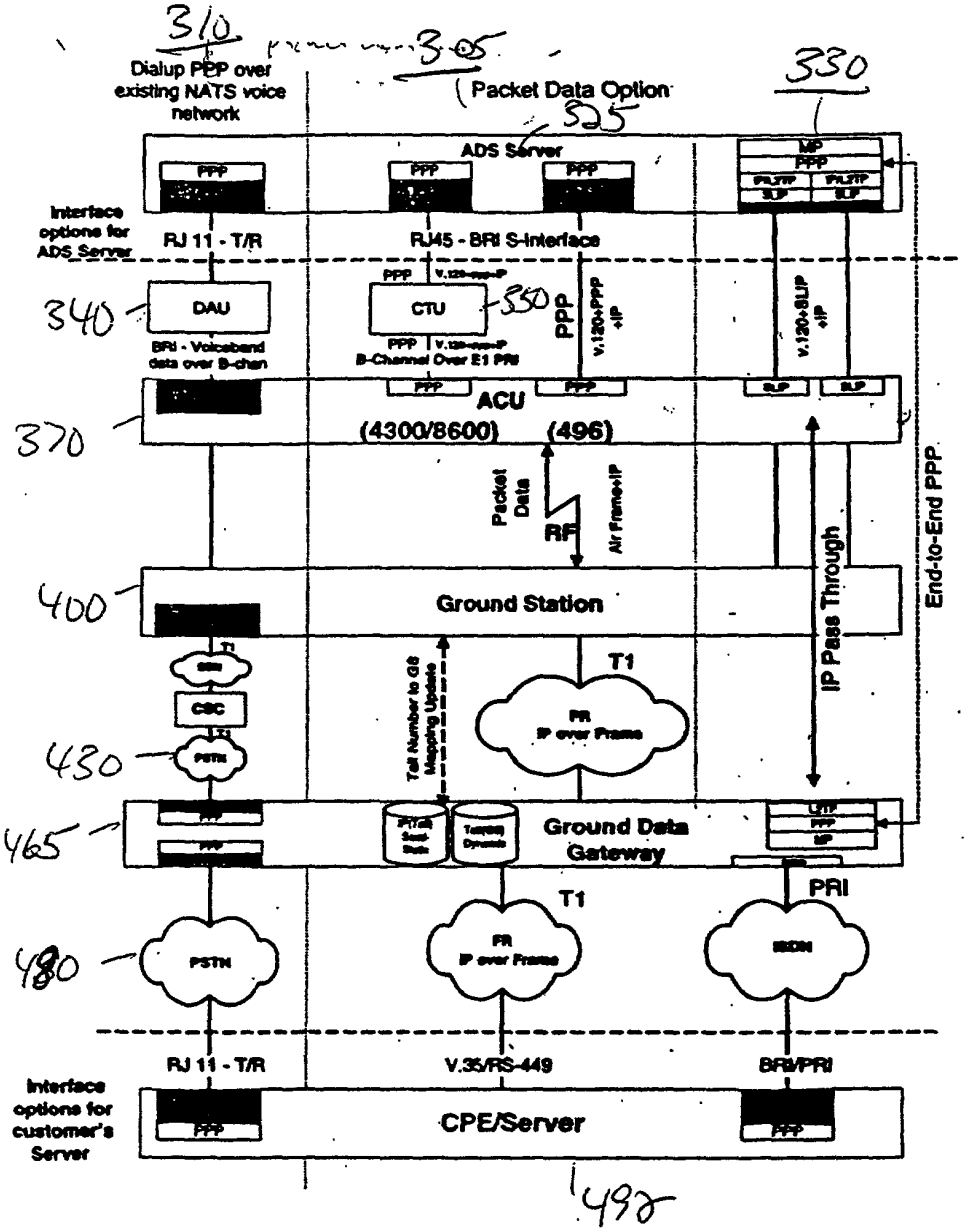

310
305
Dialup PPP over existing NATS voice network
Packet Data Option
325
330
ADS Server
PPP
MP
PPP
PPP
PPP
PPP
PPP
SLIP
SLIP
Interface options for ADS Server
RJ 11 - T/R
RJ45 - BRI S-Interface
340
DAU
BRI - Voiceband data over B-chan
CTU
350
PPP
V.120+PPP +IP
V.120+SLIP +IP
B-Channel Over E1 PRI
ACU
370
(4300/8600)
(496)
Packet Data
RF
Air Frame+IP
400
Ground Station
IP Pass Through
End-to-End PPP
T1
CSC
PSTN
430
Tail Number to GS Mapping Update
T1
FR IP over Frame
465
Ground Data Gateway
PRI
T1
480
PSTN
FR IP over Frame
ISDN
RJ 11 - T/R
V.35/RS-449
BRI/PRI
Interface options for customer's Server
CPE/Server
490

FIG. 3

500

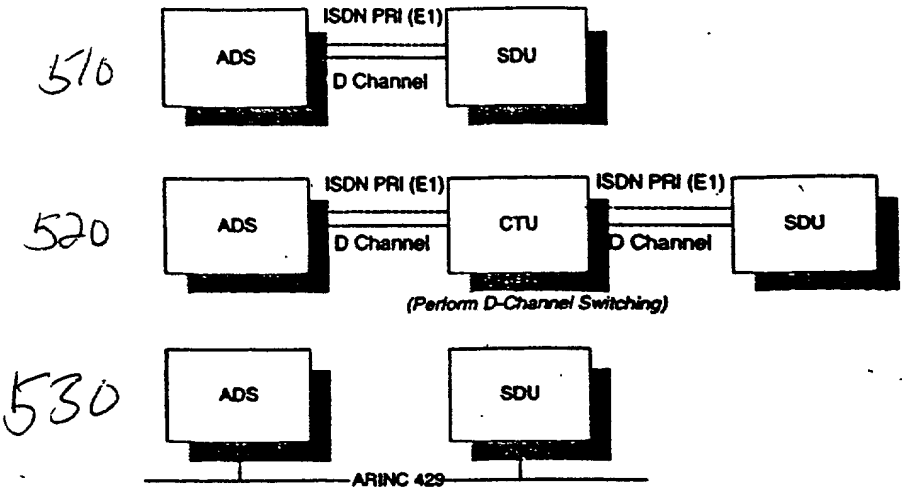

510
ADS
ISDN PRI (E1)
D Channel
SDU
520
ADS
ISDN PRI (E1)
D Channel
CTU
ISDN PRI (E1)
D Channel
SDU
(Perform D-Channel Switching)
530
ADS
SDU
ARINC 429

FIG. 4

600

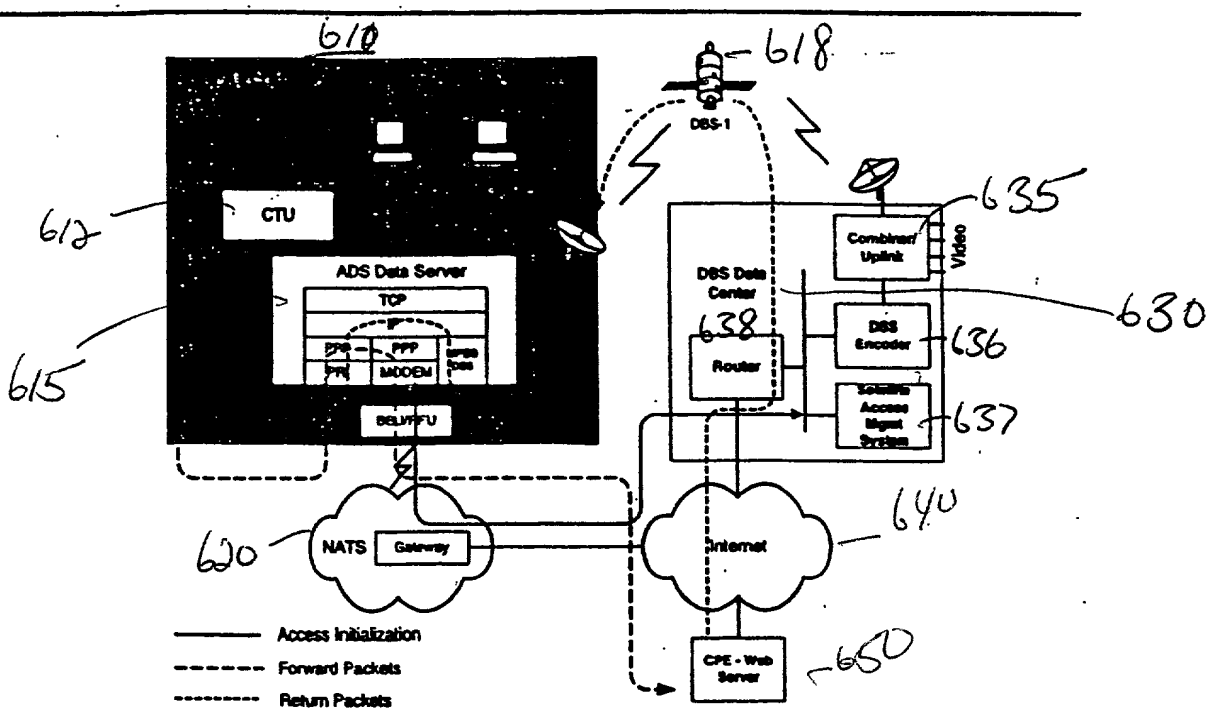

610
618
DBS-1
635
612
CTU
ADS Data Server
TCP
IP
PPP
MODEM
615
DBS Data Center
Combined Uplink
Video
630
638
Router
DBS Encoder
636
Satellite Access Mgmt System
637
640
620
NATS
Gateway
Internet
650
CPE - Web Server
Access Initialization
Forward Packets
Return Packets

FIG. 5

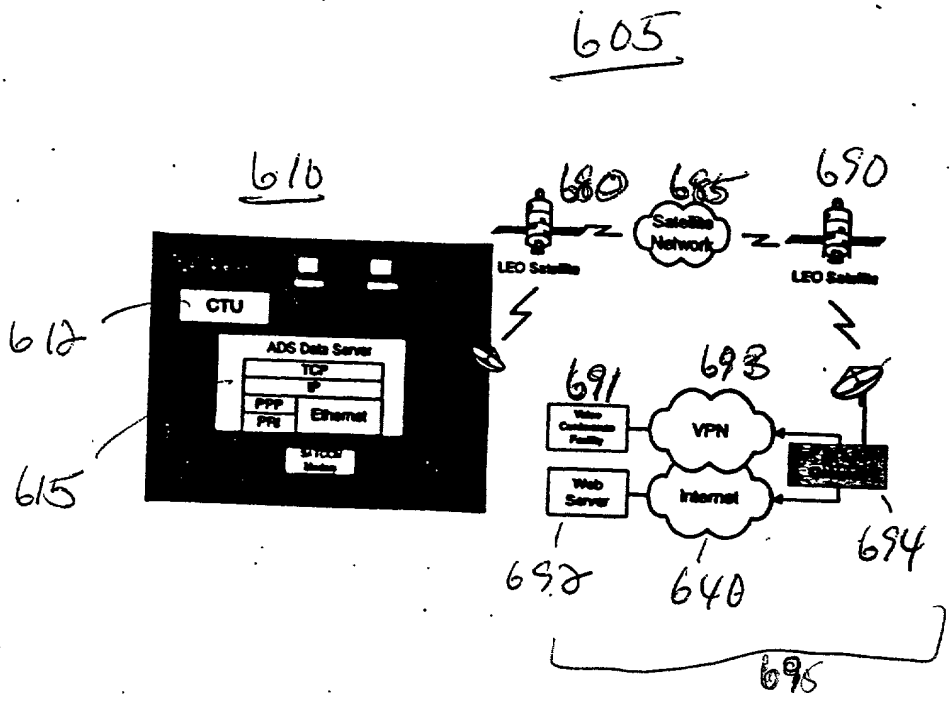

605
610
680
685
690
LEO Satellite
Satellite Network
LEO Satellite
CTU
612
ADS Data Server
TCP
IP
PPP
PPI
Ethernet
615
691
693
VPN
Web Server
Internet
694
692
640
695

FIG. 6

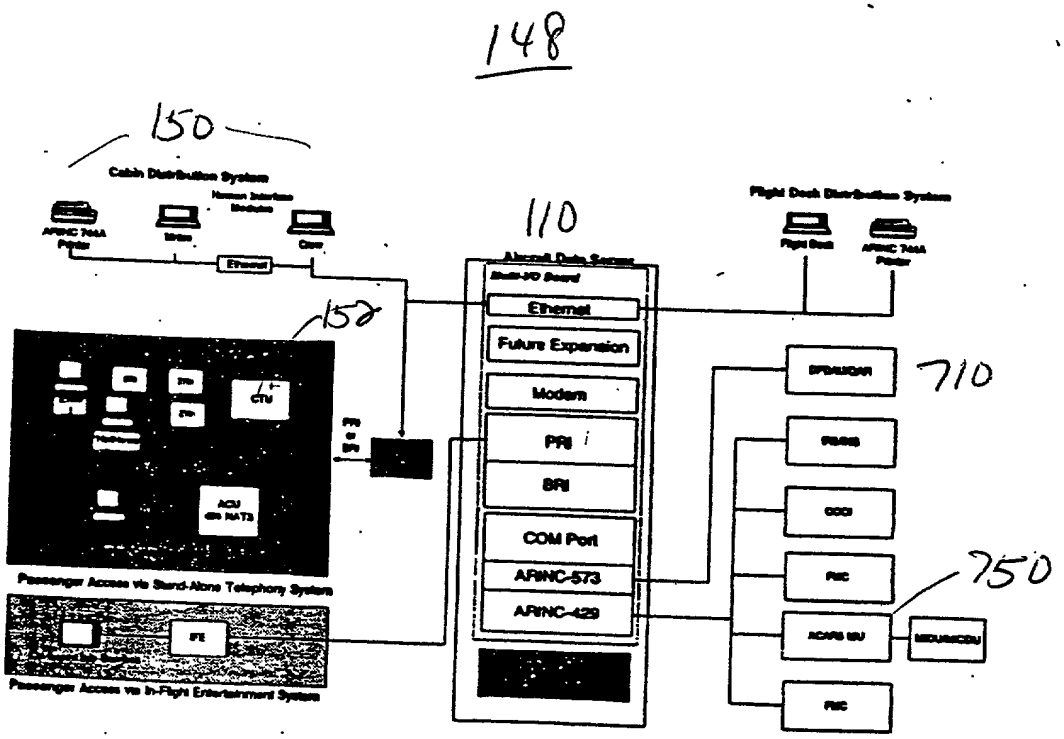

148
150
Cabin Distribution System
Ethernet
152
110
Ethernet
Future Expansion
Modem
PRI
BRI
COM Port
ARINC-573
ARINC-429
Flight Deck Distribution System
710
750
Passenger Access via Stand-Alone Telephony System
Passenger Access via In-Flight Entertainment System

FIG. 7

900

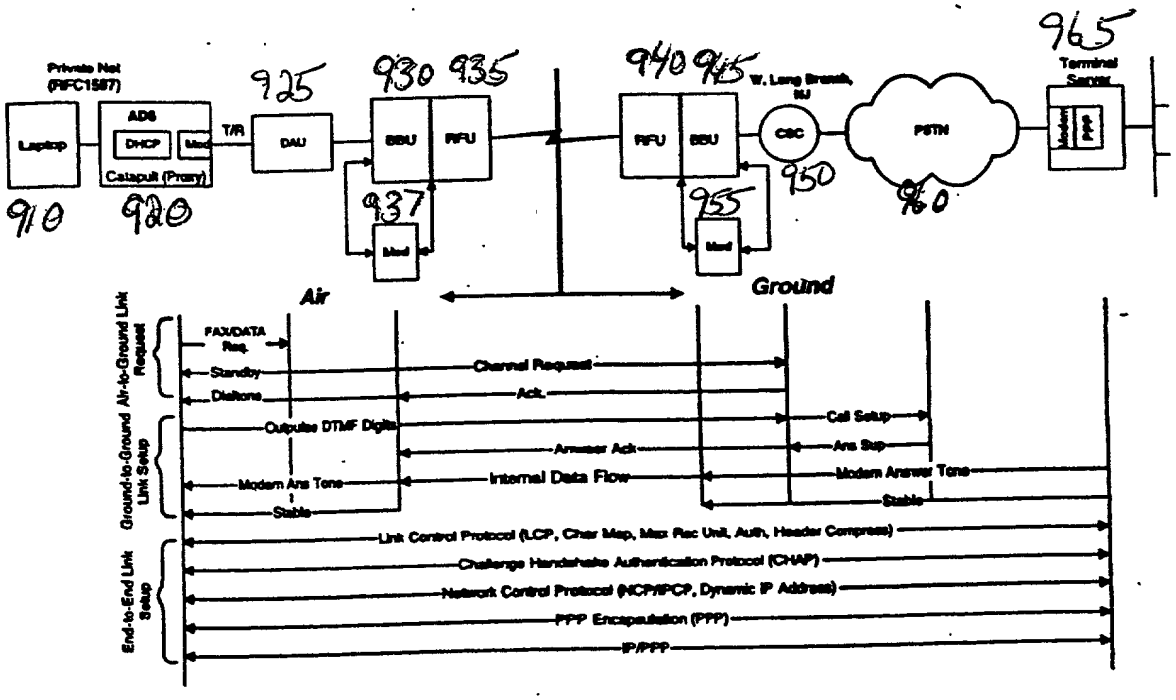

Private Net (RFC1597)
Laptop
ADS
DHCP
Mod
Catapult (Proxy)
T/R
DAU
BBU
RFU
Mod
RFU
BBU
Mod
W. Long Branch, NJ
CSC
PSTN
Terminal Server
910
920
925
930
935
937
940
945
950
955
960
965
Air
Ground
Air-to-Ground Link Request
Ground-to-Ground Link Setup
End-to-End Link Setup
FAX/DATA Req.
Standby
Dialtone
Channel Request
Ack.
Call Setup
Outpulse DTMF Digits
Answer Ack
Ans Sig
Modem Ans Tone
Internal Data Flow
Modem Answer Tone
Stable
Stable
Link Control Protocol (LCP, Char Map, Max Rec Unit, Auth, Header Compress)
Challenge Handshake Authentication Protocol (CHAP)
Network Control Protocol (NCP/IPCP, Dynamic IP Address)
PPP Encapsulation (PPP)
IP/PPP

FIG. 8

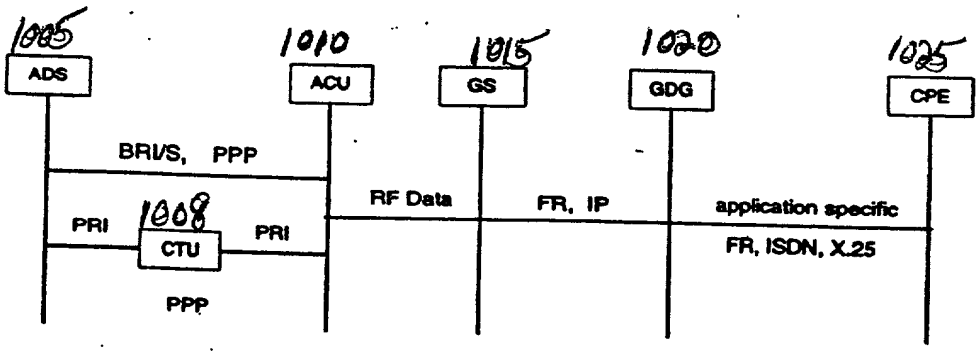

1000
1005
ADS
1010
ACU
1015
GS
1020
GDG
1025
CPE
BRI/S, PPP
PRI
1008
CTU
PRI
PPP
RF Data
FR, IP
application specific
FR, ISDN, X.25

FIG 9

1100

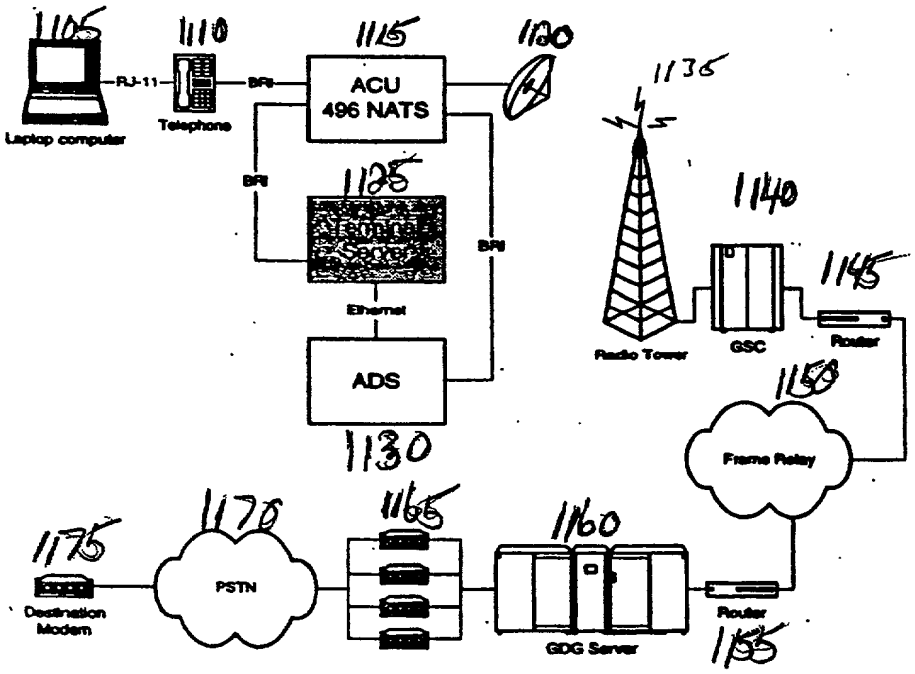

1105
Laptop computer
RJ-11
1110
Telephone
BRI
1115
ACU
496 NATS
1120
BRI
1125
Ethernet
BRI
ADS
1130
1135
Radio Tower
1140
GSC
1145
Router
1150
Frame Relay
1155
Router
1160
GDG Server
1165
1170
PSTN
1175
Destination
Modem

FIG. 10

1200

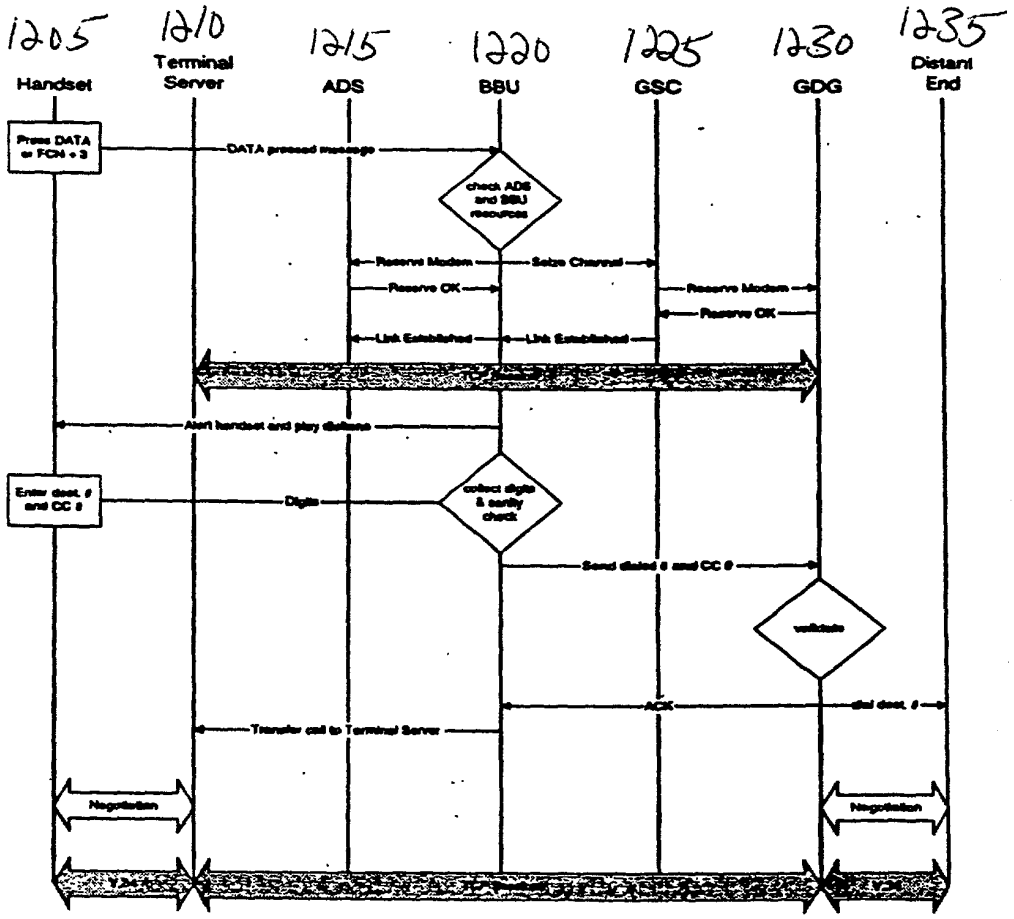

1205
Handset
1210
Terminal Server
1215
ADS
1220
BBU
1225
GSC
1230
GDG
1235
Distant End
Press DATA or FCN + 3
DATA pressed message
check ADS and BBU resources
Reserve Modem
Seize Channel
Reserve OK
Reserve Modem
Reserve OK
Link Established
Link Established
Alert handset and play dialtone
Enter dest. # and CC #
Digits
collect digits & sanity check
Send dialed # and CC #
validate
ACK
dial dest. #
Transfer call to Terminal Server
Negotiation
Negotiation

FIG. 11

1400

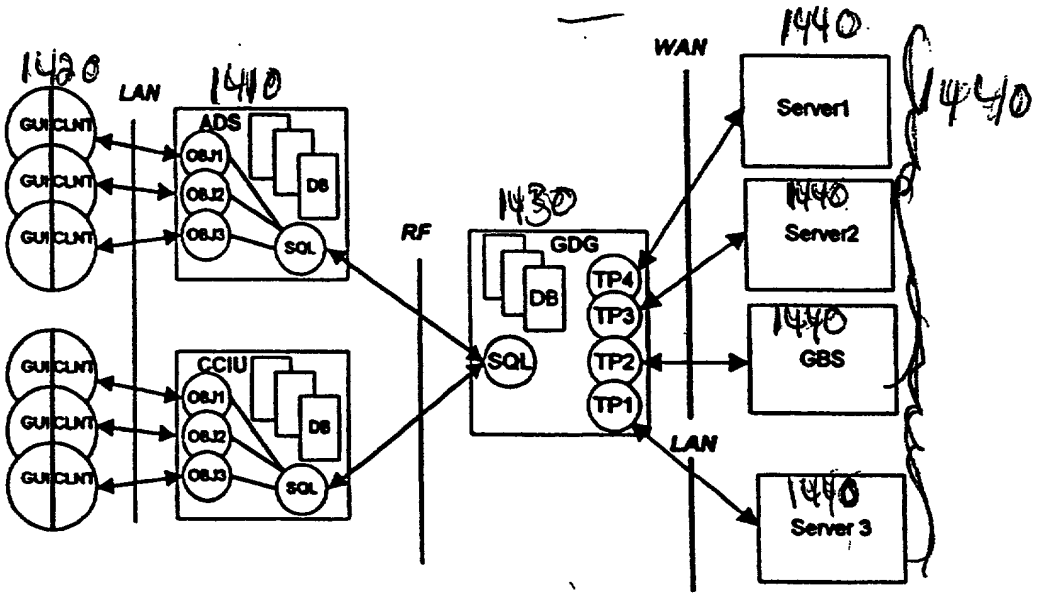

1420
LAN
1410
ADS
OBJ1
OBJ2
OBJ3
DB
SQL
GUICLNT
GUICLNT
GUICLNT
CCIU
OBJ1
OBJ2
OBJ3
DB
SQL
GUICLNT
GUICLNT
GUICLNT
RF
1430
GDG
DB
SQL
TP4
TP3
TP2
TP1
WAN
LAN
1440
Server1
1440
Server2
1440
GBS
1440
Server 3
1440

FIG. 12

1300

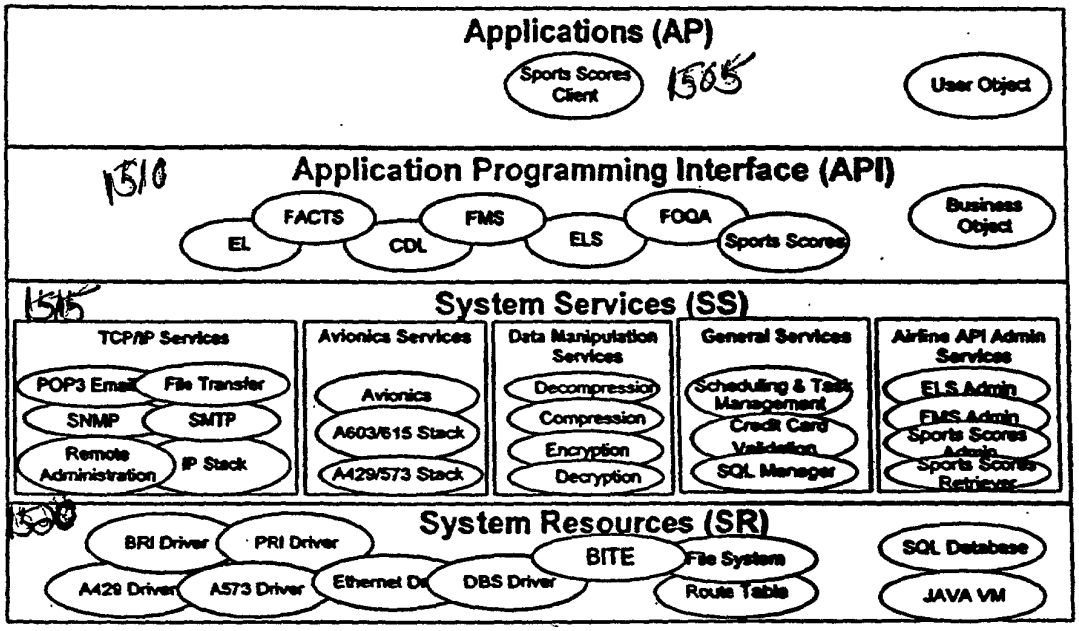

Applications (AP)
Sports Scores Client
1505
User Object
1510
Application Programming Interface (API)
EL
FACTS
CDL
FMS
ELS
FOQA
Sports Scores
Business Object
1515
System Services (SS)
TCP/IP Services
POP3 Email
File Transfer
SNMP
SMTP
Remote Administration
IP Stack
Avionics Services
Avionics
A603/615 Stack
A429/573 Stack
Data Manipulation Services
Decompression
Compression
Encryption
Decryption
General Services
Scheduling & Task Management
Credit Card Validation
SQL Manager
Airline API Admin Services
ELS Admin
FMS Admin
Sports Scores Admin
Sports Scores Retriever
1520
System Resources (SR)
BRI Driver
PRI Driver
A429 Driver
A573 Driver
Ethernet Dr
DBS Driver
BITE
File System
Route Table
SQL Database
JAVA VM

FIG. 13

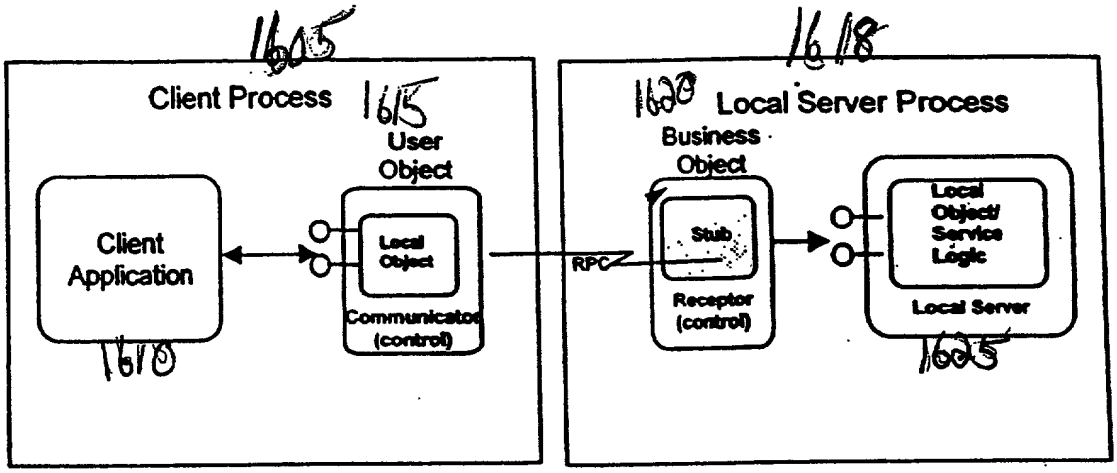

1605
Client Process
1615
User Object
Client Application
Local Object
Communicator (control)
1610
1618
1620
Local Server Process
Business Object
Stub
RPC
Receptor (control)
Local Object/ Service Logic
Local Server
1605

FIG. 14

1700

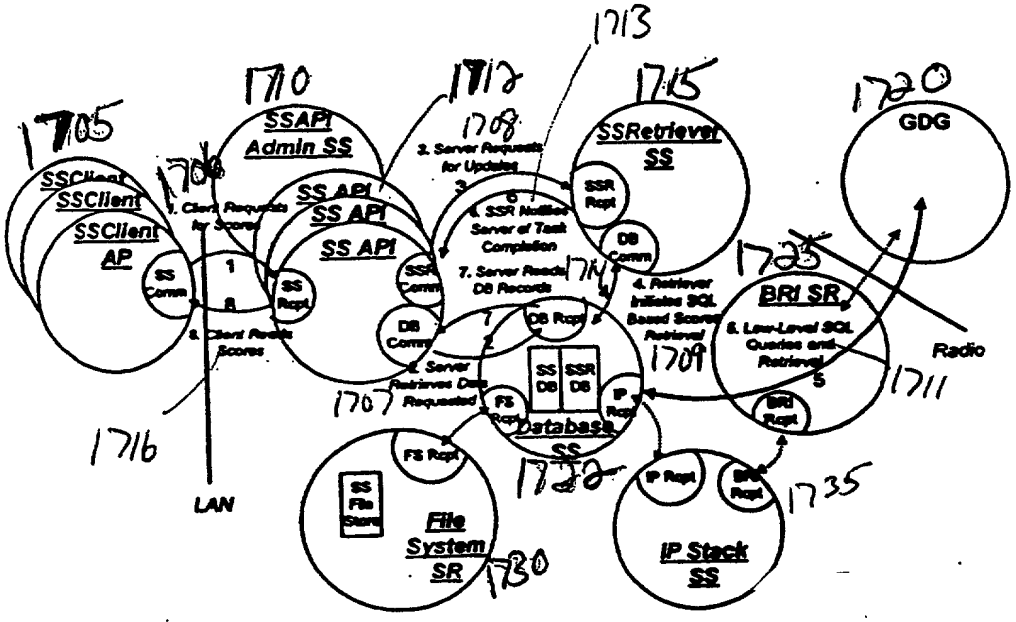
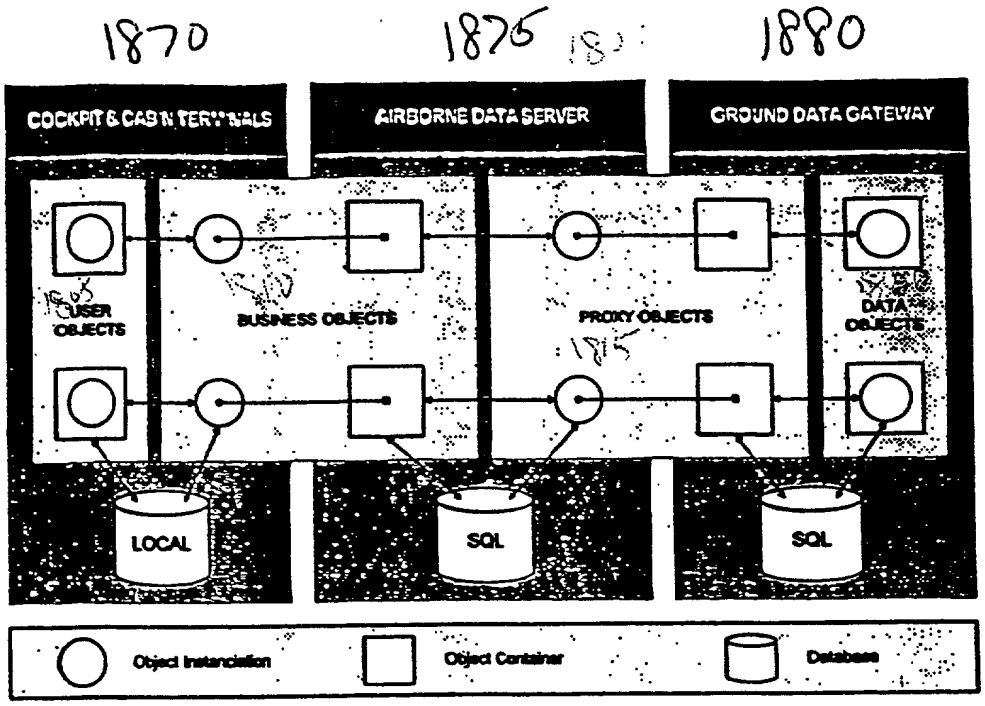

1705
SSClient
SSClient
SSClient
AP
SS Comm
1710
SSAPI
Admin SS
SS API
SS API
SS API
SS Rcpt
1708
2. Server Requests for Updates
3
4. SSR Notifies Server of Task Completion
7. Server Reads DB Records
SSR Comm
DB Comm
1712
1713
1715
SSRetriever SS
SSR Rcpt
DB Comm
1714
1720
GDG
1725
BRI SR
6. Low-Level SQL Queries and Retrieval
5
1709
4. Retriever Initiates SQL Based Scores Retrieval
Radio
1711
1707
5. Server Retrieves Data Requested
DB Rcpt
SS DB
SSR DB
FS Rcpt
IP Rcpt
Database SS
1720
BRI Rcpt
1735
1716
LAN
FS Rcpt
SS File Client
File System SR
1730
IP Rcpt
IP Stack SS

FIG. 15


1870
1875
1880
COCKPIT & CABIN TERMINALS
AIRBORNE DATA SERVER
GROUND DATA GATEWAY
USER OBJECTS
BUSINESS OBJECTS
PROXY OBJECTS
DATA OBJECTS
LOCAL
SQL
SQL
Object Instanciation
Object Container
Database

1800

FIG. 16

Property Name	Type	Allowable Value	Comment
Client Control Selectable Category (SCCatAvail)	List	Examples are *General Sports News, Major League Baseball, National Basketball Association, Men's College Basketball, Women's College Basketball, National Football League, College Football, National Hockey League, Golf, Tennis, Canadian Football League, Major League Soccer, Auto Racing.*	This property item specifies the individual record types that will be available for the Client Control to display as selectable items. Each Sports Scores item contains its own property and can also be (de)selected via the Server Control. The Client Control can only view and make selection decision on the ones that are selected (enabled) here.
Maximum Number of Client Selectable Category (SCMaxCatSel)	Int	0 – Number of Server Control Selected Category. Default: Number of Selected Category.	This property specifies the upper limit of how many sports scores categories the Client can select. (*SCMaxCatSel* is less or equal to the total number of *SCCatAvail*)
Maximum number of Client Connection (SCMaxConn)	Int	0 – 256. Default: 16	This property specifies how many call instances can be created.
Cost (SCCost)	char	1 – High, 0 – Low. Default is 0. Numbers in ASCII	This parameter determines the permissible transmission type. If High is specified, overflow to SATCOM is allowed if NATS is not available.
Priority (SCPrio)	char	1 – High, 0 – Low. Default is 0. Numbers in ASCII	This parameter determines the priority of the delivery. High priority job is placed ahead of the queue. Jobs with the same level of priority are processed on the FCFS basis.

Administrative Property for Sports Scores API

FIG. 17

Property Name	Type	Allowable Value	Comment
Category List (CCCatList)	List	Examples[5] are *General Sports News, Major League Baseball, National Basketball Association, Men's College Basketball, Women's College Basketball, National Football League, College Football, National Hockey League, Golf, Tennis, Canadian Football League, Major League Soccer, Auto Racing.*	This property describes the selectable sports scores items. Each Sports Scores item contains its own property. Once the item is selected, the property of the item is displayed and can be modified be the user. Example of the sub-property item is the list of selectable teams to retrieve the sports scores for or the option to download images.
On-Demand Update (CCODUpdate)	Bool	*True* or *False*. Default: *False*	This property specifies whether to query for the existing data available on the server or to get the latest scores from the GDG.
Cost (CCCost)	char	1 – High, 0 – Low. Default is 0. Numbers in ASCII. Valid only when *CCODUpdate* is *true*.	This property determines the permissible transmission type. This overrides the Server side property and is only available to client control with privilege.
Priority (CCPrio)	char	1 – High, 0 – Low. Default is 0. Numbers in ASCII. Valid only when *CCODUpdate* is *true*.	This parameter determines the priority of the delivery. This overrides the Server side property and is only available to client control with privilege.

Table 2 – Client Control Property for Sports Scores API

FIG. 18

Property Name	Type	Allowable Value	Comment
Locator Database (RCDatabase)	List	Each record contains[6]: Category, SQL Port, SQL Script Index, etc.	This item is a manifest of the locator database and contents are editable via this property.
Update Schedule (RCSchedule)	Char	0 – ADS own schedule, 1 – Custom schedule, 2 – No scheduled update.	ADS schedule is a special custom schedule that has been fine tuned for airline. The Custom schedule allows the System Administrator to create his/her own schedule. No Schedule is used to disable the schedule update. The update is always on-demand. When Custom is chosen, a separate property describing tunable items is available for modification.
Update All (RCUpdateAll)	Bool	*True* or *False*. Default: *False*	This field, if is *true*, will instruct the Retriever to update all the sports scores. This property is used along with the On-Demand Update Method.
Update List (RCUpdateList)	Bool	*True* or *False*. Default: *False*	This field, if is *true*, will instruct the Retriever to update the sports scores based on List describing below. This property is used along with the On-Demand Update Method and is mutually exclusive with *RCUpdateAll*.
Category List (RCCatList)	List	Examples are *General Sports News, Major League Baseball, National Basketball Association, Men's College Basketball, Women's College Basketball, National Football League, College Football, National Hockey League, etc.*	This property describes the sports scores items for retrieval. Each Sports Scores item contains its own property. This property is valid only if *RCUpdateList* is *true*.

Table 3 – Retriever Control Property for Server

FIG. 19

Method Name	Comment
Update Property (SMUpdateP)	This method allows the Admin SS to activate the properties specified in Section 5.1.1.1.
Update All (SMUpdate)	This privileged method is used to update all the sports scores records against the Cached Database on GDG. The associated property is described in Section 5.1.1.2.
Update List (SMUpdateList)	This method, combined with the property described in Section 5.1.1.2, is used to update only the records specified on the list.

Table 4 – Server Side Methods for Sports Scores API

FIG. 20

Method Name	Comment
Update List (CMUpdateList)	This method, combined with the property described in Section 5.1.1.2, is used to update only the records specified on the list against the database on GDG.
Get List (CMGetList)	This method, combined with the property described in Section 5.1.1.2, is used to get only the records specified on the list against the database on ADS.

Table 5 – Client Side Methods for Sports Scores API

FIG. 21

Text Select Inc. 1-800-PDF-TEXT